

**Parallel session 1 (Wednesday 9.45–11.15)**

Paper	Title	Author(s)	Proposal type	What session?	Room
4	Augmented reality in education for sustainable development in preschool – the importance of 'place'	Marie Fridberg and Andreas Redfors	Paper presentation	1A	007
107	Bridging the gaps? Exploring science teaching continuity across early years transitions through semantic profiles	Christina Ottander and Bodil Sundberg	Paper presentation	1A	
138	The manifestation of science in STEM and Makerspaces activities.	Svava Pétursdóttir	Paper presentation	1A	
3	A dual implementation of inquiry-based science education (ibse) in science teacher education	Tonje Tomine Seland Strat	Paper presentation	1B	008
57	Transitioning from the role of the learner to the role of the teacher: Experiences from a student teacher training in inquiry-based science education	Jørgen Stange Larsen, Idar Mestad and Lydia Schulze Heuling	Paper presentation	1B	
105	A framework for group discourse analysis and its application on ibse activities in teachers education	Ingjald Pilskog, Bernt Rydland Olsen and Erlend Sæbø	Paper presentation	1B	
8	Using "nature of science" as a tool for inclusive teaching in science – a development project	Anders Jönsson	Paper presentation	1C	103
34	History of science and argumentative texts for learning about the nature of science: an intervention study in secondary physics	Svein Ove Fagerheim and Berit Bungum	Paper presentation	1C	
46	Relevant og yrkesrettet naturfagundervisning for yrkesfagelever?	Berit Reitan and Mette Nordby	Paper presentation	1C	
10	Students' negotiations of scientific content and multimodal representation in group work in ecology	Hanna Wanselin and Kristina Danielsson	Paper presentation	1D	104
21	Högstadielärares tankar om att arbeta med skönlitteratur i ämnena biologi, fysik och kemi	Jenny Edvardsson, Lotta Leden and Kristina Juter	Paper presentation	1D	
132	Science education transformation in times of climate change: Interdisciplinary inquiry and problem-based learning in steam across the education continuum	Lykke Bertel and Mette Møller Jeppesen	Paper presentation	1D	
37	Teacher students' connection of outdoor education in science to sustainable development.	Dag Atle Lysne, Bård Knutsen and Strømme Alex	Paper presentation	1E	107
56	Students' interest in science and technology investigated as collective identities	Anna-Karin Westman, Anders Jidesjö and Magnus Oskarsson	Paper presentation	1E	
85	Research-based recommendations for addressing students' futures thinking in science education	Antti Laherto, Tapio Rasa, Eleonora Barelli, Erica Bol, Martina Caramaschi, Giulia Tasquier and Olivia Levrini	Paper presentation	1E	

**Parallel session 2 (Wednesday 11.30–13.00)**

Paper	Title	Author(s)	Proposal type	What session?	Room
2	Follow-up research related to science kids – a preschool science project	Andreas Redfors, Lotta Leden and Marie Fridberg	Paper presentation	2A	007
30	Yngre elevers potensiale til å utvikle forståelse gjennom dybdelæring	Eli Munkebye and Ragnhild Lyngved Staberg	Paper presentation	2A	
70	Pædagogisk personales vurdering af sciencepraksisser og legestemninger i praksissituationer i danske dagtilbud	Anja Rousing Lauridsen, Linda Ahrenkiel and Morten Rask Petersen	Paper presentation	2A	
15	Redesigning a stem teacher education for sustainability	Birgitte Bjønness and Gerd Johansen	Paper presentation	2B	008
42	Stenghtening stem education in danish primary schools: an analytical model and approach to professional development	Christina Dahl Madsen and Signe Herbers Poulsen	Paper presentation	2B	
81	Sustainability issues and competences in teacher education	Anne Bergliot Øyehaug, Ingunn Solbakken and Matilde Mengkrog Holen	Paper presentation	2B	
22	Vi träffas i nätverk – vilken typ av kunskaper i naturvetenskap och hållbar utveckling beskriver lärarstudenter att de fått med sig från en Nordisk nätverkskurs	Pernilla Granklint Enochson and Agneta Rehn	Paper presentation	2C	103
89	Embedding a transformative dimension in teaching/learning climate change	Giulia Tasquier	Paper presentation	2C	
98	“What is my responsibility”? Education on climate change in upper secondary schools	Brynhildur Bjarnadóttir	Paper presentation	2C	
23	Critical thinking in the making: characteristics of students' practices and teacher facilitation in an ssi project	Stein Dankert Kolstø, Vegard Havre Paulsen and Idar Mestad	Paper presentation	2D	104
24	Ungdommens kritiske tenking i BU kontekst	Saeed Manshadi and Jo Espen Tau Strand	Paper presentation	2D	
40	Norske naturfaglæreres beskrivelse av bærekraftundervisning	Marthe Arntzen, Eldri Scheie and Berit S. Haug	Paper presentation	2D	
18	How useful are students’ answers to end-of-chapter tests in chemistry for formative assessment?	Matthias Stadler and Randi Skei Bakketun	Paper presentation	2E	107
62	Assessment of science competencies in primary and lower secondary education in denmark - experiences from the natkom project	Jørgen Løye Christiansen, John Andersson Andersson, Dorrit Hansen, Lars Bo Kinnerup and Jørgen Haagen Petersen	Paper presentation	2E	
118	Assessing environmental knowledge: which items are more difficult across grades and nordic countries?	Tony Tan and Nani Teig	Paper presentation	2E	
114	Drawing in squares: investigating science concepts in the classroom	Helena Bichao	Interactive workshop	2F	108

**Parallel session 3 (Wednesday 13.45–15.15)**

Paper	Title	Author(s)	Proposal type	What session?	Room
100	Stem-experts visiting school classes in science	Anders Vestergaard Thomsen	Paper presentation	<b>3A</b>	007
106	Let it bee – children as agents for biodiversity	Ingrid Jensvoll and Siw Killengreen	Paper presentation	<b>3A</b>	
134	Science Outreach	Sean Scully and Brynhildur Bjarnadóttir	Paper presentation	<b>3A</b>	
28	Norwegian pre-service teachers' knowledge about how to use programming in science education	Niklas Karlsen	Paper presentation	<b>3B</b>	008
61	Sexuality, relationships, and identity in swedish teacher education	Mats Lundström and Mattias Lundin	Paper presentation	<b>3B</b>	
65	Preservice teachers group talk while programming micro:bit	Siv Gundrosen Aalbergsjø and Mona Liland Aabel	Paper presentation	<b>3B</b>	
38	The nordic student teachers ideas about climate change and teaching	Kristín Norðdahl, Anja Gabrielsen, Edda Elísabet Magnúsdóttir, Beth Wehner Andersen, Søren Rapple and Lars O. Demant-Poort	Paper presentation	<b>3C</b>	103
64	Människans hot mot den biologiska mångfalden – lärarstudenters upplevelser och förslag på undervisning om biologisk mångfald i grundskolans tidigare år	Annie-Maj Johansson, Susanne Antell, Jörgen Dimenäs and Johanne Maad	Paper presentation	<b>3C</b>	
127	Hold spenningen oppe - tilrettelegging for lærerstudenters uforskning av argumenter om energiproduksjon	Idar Mestad	Paper presentation	<b>3C</b>	
36	(Dis-)continuity between educational levels: Classrooms and materials as prerequisites for technology education	Karin Stolpe and Andreas Larsson	Paper presentation	<b>3D</b>	104
53	Educating the attention to acknowledge and respond to the natural world	Anne Lien	Paper presentation	<b>3D</b>	
90	Læreres holdninger til praktiske og skapende arbeidsformer som grunnlag for praksisendring	Subashini P. Ruben, Celine Aas and Liv Oddrun Voll	Paper presentation	<b>3D</b>	
66	Læremiddelbrug og literacyforståelser i naturfagene i danmark	Martin Sillasen, Jesper Bremholm, Bettina Buch, Marianne Oksbjerg, Therese Nielsen, Ditte Pagaard, Stine Knudsen, Tine Ejdrup and Claus Auning	Symposium	<b>3E</b>	107
77	Low-cost VR-tools suitable for science teaching and learning	Jardar Cyvin and John Magne Grindeland	Interactive workshop	<b>3F</b>	108

**Parallel session 4 (Thursday 9.45–11.15)**

Paper	Title	Author(s)	Proposal type	What session?	Room
68	The pedagogical potentials of wonder for supporting students' engagement and learning in science	Bodil Sundberg, Johanna Andersson and Christina Ottander	Paper presentation	4A	007
69	The role of wonder in science practises. A delphi study of different stakeholders' views	Johanna Andersson, Christina Ottander and Bodil Sundberg	Paper presentation	4A	
80	Utrymme för flerspråkighet? Pedagogiska möjligheter och begränsningar för flerspråkiga förhållningssätt och aktiviteter i no-undervisningen	Annika Karlsson, Pia Nygård Larsson, Petra Svensson Källberg and Anders Jakobsson	Paper presentation	4A	
6	Teacher students' prior knowledge of water pathways and what they think is essential pupils' knowledge	Pernilla Granklint Enochson	Paper presentation	4B	008
43	Teachers' talk about outdoor education in a professional learning community	Majken Korsager, Berit Reitan, Kristine Bakkemo Kostøl and Merethe Frøyland	Paper presentation	4B	
55	Integrating species identification in creative lesson planning	Birgitte Seehuus and Cato Tandberg	Paper presentation	4B	
12	Secondary high school teachers scaffolding of inquiry-based learning in the chemistry classroom	Tonje Tomine Seland Strat, Siv Paus Brovold and Anna Imsgard Strøm	Paper presentation	4C	103
93	University students' considerations of the usefulness of models of chemical bonding	Iselin Grav Aakre	Paper presentation	4C	
111	On the meaning-making of large and small spatial scales: a case study of experts in molecular biology	Urban Eriksson, Jenny Hellgren and Christopher Robin Samuelsson	Paper presentation	4C	
5	Literary texts in upper secondary science teacher education	Lotta Leden and Helena Andersson	Paper presentation	4D	104
16	Køn, Motivation, og Identitet i Naturfagsundervisningen	Nanna Villumsen, Camilla Blomgreen and Lars Bang Jensen	Paper presentation	4D	
117	Supporting 10th grade students' explanations about mass conservation in combustion reactions	Kirsti Marie Jegstad, Idar Mestad and Shokan Ahmed	Paper presentation	4D	
88	NFSUN 40 years 1984–2024: A historic review and an analysis of content in an international perspective	John Magne Grindeland, Jardar Cyvin and Jens Dolin	Symposium	4E	107
52	Responding to the environmental crisis: attentive listening to soil	Laura Colucci-Gray, Edvin Østergaard, Ramsey Affifi and Donald Gray	Interactive workshop	4F	108

**Parallel session 5 (Thursday 11.30–13.00)**

Paper	Title	Author(s)	Proposal type	What session?	Room
135	Icelandic debates about instruction time in lower secondary science education	Haukur Arason and Edda Elísabet Magnúsdóttir	Paper presentation	5A	007
31	Revisioning science education: Fostering content knowledge-linking within the energy concept using the integrated science teaching approach	Dennis Dietz and Claus Bolte	Paper presentation	5A	
19	Do inquiry practices foster high-quality instruction? – results from a classroom video study in science	Marianne Ødegaard, Solveig Karlsen, Magdalena Kersting, Marit Kjærnsli, Mai Lill Suhr Lunde, Magne Olufsen and Johannes Sæleset	Paper presentation	5A	
59	Creating agency and values for students in co-creation processes	Vildana Bašić and Eva Davidsson	Paper presentation	5B	008
109	Curiosity driven inquiry of real-life complex problems in physics; experiences from science teacher education	Kristin Elisabeth Haugstad and Maria I.M. Febri	Paper presentation	5B	
110	New scientific knowledge for pupils – a research-based development project	Steffen Elmoose	Paper presentation	5B	
13	Science centres as environments for in-service teacher education: when formal and informal settings meet	Maria Sparf	Paper presentation	5C	103
76	Digital media and climate literacy: understanding youth engagement in Fridays For Future (FFF) movement	Anne Solli	Paper presentation	5C	
92	Aquaculture on display – Dilemmas arising in a sponsored exhibition	Trude Nordal, Ingrid Eikeland and Majken Korsager	Paper presentation	5C	
79	Breaking borders – sharing ownership of drawing in science	Helena Bichao and Jardar Cyvin	Interactive workshop	5D	104
86	Kompetanseutvikling i profesjonsfellesskapet for en inkluderende undervisning	Aud Ragnhild Skår, Maria Gaare Dahl, Subashini P. Ruben, Rim Tusvik, Ella Maria Cosmovici Idsøe and Merethe Frøyland	Interactive workshop	5E	107
35	Udvikling af fagsprog i forbindelse med laboratoriearbejde	Pernille Ulla Andersen and Marianne Erneberg	Poster presentation	5F	In open space
44	Relationen mellan högstadielävers epistemiska känslor och meningsskapande om evolution	Magdalena Andersson, Christina Ottander and Bodil Sundberg	Poster presentation	5F	
75	Teaching about deep-time perspectives on climate change – combining astronomy and geology	Maria Rosberg and Elisabeth Einarsson	Poster presentation	5F	
94	Teaching is not for life – student teachers' reflections on careership and their possible future selves	Grethe Beiskjaer	Poster presentation	5F	
102	A teacher-researcher collaboration in primary science	Maria Weiland	Poster presentation	5F	

**Parallel session 6 (Thursday 13.45–15.15)**

Paper	Title	Author(s)	Proposal type	What session?	Room
7	Preschool children's agency in play-activities with scientific content	Anna Henriksson, Marie Fridberg and Lotta Leden	Paper presentation	6A	007
25	Preschool teachers' discussions about using digital tools in play-responsive science teaching	Kristina Lund, Anreas Redfors and Agneta Jonsson	Paper presentation	6A	
137	eTwinning in Science Learning: The Perspectives of Pre-service Primary School Teachers	Svava Pétursdóttir	Paper presentation	6A	
32	A formative intervention to support science teachers' professional learning	Helena Näs and Lina Varg	Paper presentation	6B	008
74	Reading Nonfiction Picturebooks In Science as Part of Educations for Sustainable Development	Pauline Book	Paper presentation	6B	
96	Pre- and In-Service Science Teachers' Concerns Focussing on the Requirement to Enhance both Students' Academic Language Competences and their Scientific Literacy in Everyday Schooling	Claus Bolte, Robert Gieske and Sabine Streller	Paper presentation	6B	
20	Experiential aesthetic science education: fieldtrips in danish secondary school	Katrine Bergkvist Borch and Connie Svabo	Paper presentation	6C	103
47	Samisk tradisjonell kunnskap som bidrag til å utvikle elevers naturfaglige allmenndannelse	Mona Kvivesen and Marianne Isaksen	Paper presentation	6C	
122	Elevers motivasjon for uteskole i kaldt vintervær / student motivation for out-door schooling in cold winter weather	Åse Karin Langbekkhei and Dag Atle Lysne	Paper presentation	6C	
29	Words Matter: A Comprehensive Analysis of Addressee Orientation in Secondary Students' Science Writing	Robert Gieske, Sabine Streller, Sophie Freudenberg and Claus Bolte	Paper presentation	6D	104
112	Meaning making of words in multilingual school science settings	Clas Olander and Sofie Johansson	Paper presentation	6D	
125	Students' use of language to create meaning in science discussions	Vegard Havre Paulsen, Vegard Sælen and Lydia Maria Schulze Heuling	Paper presentation	6D	
14	Building Research Literacy for Science Teaching	Karin Stolpe, William Espen Windsor, Birgitte Lund Nielsen and Claus Auning	Symposium	6E	107
99	Transdisciplinarity in higher education using the steam+ trail-tool	Ella Idsøe and Nina Troelsgaard Jensen	Interactive workshop	6F	108

**Parallel session 7 (Friday 9.45–11.15)**

Paper	Title	Author(s)	Proposal type	What session?	Room
83	What makes teacher practices effective and equitable in primary math and science classrooms?	Nani Teig, Trude Nilsen and Kajsa Yang Hansen	Paper presentation	7A	007
84	What role do teachers play in fostering academic resilience? Global insights across 58 countries	Nani Teig	Paper presentation	7A	
126	Life skills in science education – what do science teachers say and do in the classroom?	Mai Lill Suhr and Rebecca L. S. Barreng	Paper presentation	7A	
27	Student teachers in a co-inquiring position in professional inquiry projects initiated by science teacher educators	Marie-Louise Krarup, Niels Anders Illemann Petersen, Maiken Rahbek Thyssen, Dorrit Hansen, Claus Auning and Birgitte Lund Nielsen	Paper presentation	7B	008
78	Exploring pre-service teachers' views of science and scientists using science-comics	Maren Fredagsvik	Paper presentation	7B	
136	Artefact-mediated narratives used in formative and summative assessment in an preservice teacher biology class	Henrik Levinsen	Paper presentation	7B	
9	Environmental citizenship – Swedish upper secondary students intended engagement, attitudes, subjective norms and perceived control	Eva Knekta	Paper presentation	7C	103
33	Hvilke bærekraftkompetnser anvender elever i arbeid med et bærekraftproblem	Eldri Scheie, Eli Munkebye and Julie Glørstad Strøm	Paper presentation	7C	
82	Hvordan kan utvikling av en undervannshage være med på å bidra til elevens kunnskap om de fantastiske men sårbare marine økosystemene?	Siw Killengreen, Celine Holten Lindberg, Mathias Leines Dahle, Camilla With Fagerli and Arve Lynghammar	Paper presentation	7C	
41	Pre- and post-activities are important for facilitating learning of content knowledge in chemistry experiments	Magne Olufsen and Solveig Karlsen	Paper presentation	7D	104
101	Capturing and analysing students engineering processes using videoethnography	Morten Christensen, Helle Kruse Krossá, Martin Krabbe Sillasen and Morten Rask Petersen	Paper presentation	7D	
103	How primary students use their drawings to navigate between everyday and scientific discourses of water	Bodil Sundberg, Johanna Andersson, Sofie Areljung, Carina Hermansson and Marianne Skoog	Paper presentation	7D	
11	Delving into “the next black box” – a study on student self-assessment in upper secondary school	Ine Skorbakk	Paper presentation	7E	107
45	Costs and values of studying physics: Identifying profiles among first-year university students	Magnus Strøm Kahrs, Trine Højberg Andersen, Berit Bungum and Maria Vetleseter Bøe	Paper presentation	7E	
123	Drawing in squares: Investigating teacher students concepts of biodiversity and evolution using the draw-and write technique	Helena Bichao	Paper presentation	7E	
	NorDiNa Symposium	Mats Lundström, Are Turmo, and others	Symposium	7F	108

**Parallel session 8 (Friday 11.30–13.00)**

Paper	Title	Author(s)	Proposal type	What session?	Room
124	Samspelet av semiotiska resurser i ett transspråkande no-klassrum	Annika Karlsson	Paper presentation	8A	007
130	Examining first graders' scientific language and vocabulary use	Alison Billman	Paper presentation	8A	
131	Unveiling science capital in everyday life: exploring the potential of family everyday life in shaping primary and lower secondary danish students' science capital	Sanne Schnell Nielsen, Camilla Bech Blomgren, Nadia Møller Christiansen and Lars Sejersgård Jakobsen	Paper presentation	8A	
26	Induction activities supporting new science teachers' professional identity as science teachers	Birgitte Lund Nielsen, Pernille Ulla Andersen, Harald Brandt, Maiken Rahbek Thyssen, Mette Auning, Lars Petersen and Jens Jakob Ellebæk	Paper presentation	8B	008
58	Modeling science teacher education as second order teaching	Jens Dolin, Peer Daugbjerg and Jens Jakob Ellebæk	Paper presentation	8B	
116	Fact or fake? Strategies of pre-service chemistry teachers for searching credible information on the Internet	Dennis Dietz and Claus Bolte	Paper presentation	8B	
39	Can the science study subject, be a successful concept of citizenship education for sustainable development?	Sara Brommesson	Paper presentation	8C	103
54	Culturally relevant science education from a sámi perspective – imagining a science education including árbediethu	Anna-Karin Westman and Maria Andrée	Paper presentation	8C	
63	Concept anchors: Providing a path towards systems thinking PCK	Mette Hesselholt Henne Hansen, Karen Seierøe Barfod, Charlotte Ormstrup and Søren Witzel Clausen	Paper presentation	8C	
17	Sense-making through hybrid talk: High-achieving secondary students' language use during practical work	Stein Dankert Kolstø and Matthias Stadler	Paper presentation	8D	104
51	Navigating in a complex educational terrain for sustainable development: assessing knowledge about climate change and technological solutions in evolving information battles	Cecilia Axell and Karin Skill	Paper presentation	8D	
121	Scaffolding scientific inquiry: Adapting tiny earth for engaging high school students and their teachers in authentic research	Rikke Frøhlich Hougaard, Frederikke Dybdahl Andersen and Thomas Tørring	Paper presentation	8D	
48	Sensing taxonomies – A steam exploration	Lydia Schulze Heuling and Laura Colucci-Gray	Interactive workshop	8E	107